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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,236	10/30/2001	Ian J. Barclay	47097-01034	8861

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EXAMINER

BRITTAIN, JAMES R

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/021,236	Applicant(s) BARCLAY ET AL.	
	Examiner James R. Brittain	Art Unit 3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 60-65, 67-69 and 134-145 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 60-65, 67-69 and 134 is/are allowed.
- 6) ☒ Claim(s) 135-145 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Allowable Subject Matter

Claims 60-65, 67-69 and 134 are allowed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 135-138, 140, 141, 144 and 145 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herrington (US 5088971) in view of Kendall (WO 98/16430), Howard (US 3986914) and Smith et al. (US 4976673).

Herrington (figure 1) teaches a method of creating a plurality of recloseable bags from a web of material, comprising: providing a web of material to define bags including a fastener including first 16 and second 17 interlocking members attached to the web, the fastener allowing the bags to be recloseable; cutting the fastener with a hot knife 45 that in conjunction with the clamps 40, 41 create end stops in a unitary mass from the resulting molten material to provide a leak proof seal at the ends of the zipper (col. 4, lines 52-56); and cutting the web of material with a side-sealing bar along the line 43 in completing the formation of the individual bags (col. 4, line 65 - col. 5, line 2). The differences are that while the first and second interlocking members remain interlocked, the fastener is not disclosed as being cut, two webs and fasteners are not disclosed as secured, in other words multiple assembly lines and a first laser beam isn't used to cut the first fastener and first web and a second laser beam isn't used to cut the second fastener

and second web of material to form the bags. However, Kendal (figure 1) teaches a method replacing hot welding, radio frequency welding and ultrasonic welding in the bag making field with laser cutting and sealing so as to avoid the disadvantage of mechanical contact between the substrate to be welded and cut and the cutting equipment because mechanical contact can result in substrate sticking to the sealing/cutting equipment, and requires blades or the like which need regular sharpening, cleaning and maintenance (page 1, lines 6-17 as reproduced below).

Welding and cutting of plastics film or foil is particularly important with flexible packaging equipment, for example in the bag making industry, and also in form/fill/seal machinery.

There are three main methods for welding plastics film or foil utilised in packaging machinery. These are hot metal welding, radio frequency welding and ultrasonic welding.

All three of these methods have the disadvantage of requiring mechanical contact between the substrate to be welded and the cutting equipment. Mechanical contact can result in substrate sticking to the sealing/cutting equipment, and requires blades or the like which need regular sharpening, replacement, cleaning and maintenance. These known methods and apparatus are also mechanically complex.

Further, Kendall states that it is preferred to utilize a plurality of lasers on page 4, ¶2 (reproduced below).

Preferably, there may be a plurality of processing laser beams and scanning means each scanning means adapted to scan a processing laser beam on a different part of the substrate so that each scan overlaps or interconnects with the or each adjacent scan.

With further detail found on page 5, ¶2,3 and in particular on line 8 more than one laser can be used to produce the beams.

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According to a further aspect of the present invention there is provided apparatus for cutting and/or welding flexible packaging material in motion, said apparatus comprising:

- feeding means adapted to feed a substrate comprising two or more layers of flexible packaging material through an operational site,
- contacting means adapted to produce intimate contact between adjacent layers of the substrate at said operational site,
- one or more lasers, adapted to produce one or more processing laser beams,
- focusing means adapted to focus the one or more processing laser beams on said substrate at the operational site,
- scanning means adapted to scan the one or more processing laser beams on the moving substrate to produce one or more cuts and/or welds in said substrate, and
- control means adapted to control the relationship between the rate of scanning and the rate of motion of the substrate to produce one or more required cuts and/or welds.

Preferably, there may be a plurality of scanning means each adapted to scan a part of the substrate so that each scan overlaps or interconnects with the or each adjacent scan.

Also, two lasers are taught to be desirable on page 10, lines 1-3 as reproduced below.

Thus, multiple scanners may be required for cutting/ welding wide substrate. In this situation, there may be two or more lasers or a primary beam may be divided into at least two processing laser beams.

Additionally, Howard (figures 7-12) shows in these figures that it is desirable to have the profile strips interengaging between the ends prior to severing so as to form a better seal and

Smith et al. (figure 1) teaches that “Drum 24 is designed to process two side-by-side plastic film webs simultaneously, although only a single web is shown” (col. 7, lines 38-40) in the bag making art, in other words multiple lines of assembly with the accompanying increase in yield per unit time.

As it would be beneficial to avoid the wear of the contacting equipment of Herrington and to provide a better seal, it would have been obvious to modify the method of creating a plurality of recloseable bags taught by Herrington so as to substitute for each cutting station a laser as taught by Kendall to be desirable for providing interconnected cuts to create bags, further modify the method of Herrington to have multiple lines of assembly of bags would have been obvious in view of Smith et al. teaching such to be desirable in this field of endeavor with the accompanying increase in yield per unit of time and to further modify the method of creating bags taught by Herrington such that while the first and second interlocking members remain interlocked, the fastener is cut would have been obvious in view of Howard (figures 7-12) teaching interengaging the profile strips between the ends prior to severing so as to form a better seal. As to claim 136, Kendall clearly indicates that the laser cuts and seals the bag as indicated on page 11, the second and last paragraphs. As to claims 137, 138, 140 and 141, further modification of the method of making a plurality of bags taught by Herrington, as modified by Smith et al., such that the web moves along a drum while the laser cuts and seals both the fastener and web while held against a drum would have been obvious in view of Kendall teaching that it is desirable to utilize a rotating drum on page 8, lines 5-11 with the material tensioned over the roller by passing it at an angle over the drum, as reproduced below so as to be more efficient.

In one form the required contact may be provided by the substrate passing over a roller. The substrate may be tensioned over the roller by passing over it at an angle and by mechanical means employed to draw the substrate through the operational site and maintain tension throughout the cutting/welding process. This roller may have a surface which facilitates efficient action of the laser beams. For example, it may have a high coefficient of absorption for the wavelength of the laser beam, low thermal diffusivity and resistance to thermal shock.

As to claims 144 and 145, the use of a single laser or multiple lasers would have been obvious in view of Kendall indicating there can be two or more lasers or a primary beam divided into at least two processing laser beams as indicated above on page 10, lines 1-3.

Claim 139 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herrington (US 5088971) in view of Kendall (WO 98/16430), Howard (US 3986914) and Smith et al. (US 4976673) as applied to claim 138 above, and further in view of Bennett et al. (US 4507535).

Further modification of the method of cutting taught by Herrington and Kendall such that the beam projects from an interior of a drum through slots to the outside would have been obvious in view of Bennett et al. (figures 1, 5) teaching the use of the laser projecting from the inside of the drum as being desirable.

Claim 142 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herrington (US 5088971) in view of Kendall (WO 98/16430), Howard (US 3986914) and Smith et al. (US 4976673) as applied to claim 141 above, and further in view of Andreoli et al. (US 5225649).

Further modification of the method of cutting taught by Herrington and Kendall such that the holding of the flexible material against the drum is accomplished by suctioning as indicated by Smith et al. via ports 36a, 36b would have been obvious in the application of a laser cutter,

too in view of Andreoli et al. (figures 4-6) teaching that suctioning the web against the drum improves the feeding and guiding of the web across the drum (col. 1, lines 55-60; col. 2, lines 27-36).

Claim 143 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herrington (US 5088971) in view of Kendall (WO 98/16430), Howard (US 3986914) and Smith et al. (US 4976673) as applied to claim 137 above, and further in view of Kurihara et al. (US 5382773).

Further modification of the method of cutting taught by Herrington and Kendall such that the laser is located outside of an interior of the drum and a laser beam from the laser projects inwardly into the interior and then radially outward from the interior of the drum would have been obvious in view of Kurihara et al. (figure 3) teaching that it is desirable to have such a configuration for ease of tending the laser.

Response to Arguments

Applicant's arguments with respect to claims 135-145 have been considered but are moot in view of the new ground(s) of rejection. Applicant's inclusion of multiple assembly lines in a claim having the breadth of scope of claim 135 is new, not presented before, and necessitates the use of the reference to Smith et al., which is being made of record herein.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

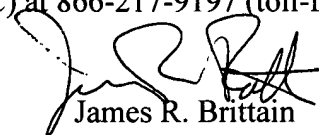
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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James R. Brittain whose telephone number is (571) 272-7065. The examiner can normally be reached on M-F 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (571) 272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James R. Brittain
Primary Examiner
Art Unit 3677

JRB